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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)
12480-000046/US

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On _____

Signature _____

Typed or printed name _____

Application Number	Filed
10/828,471	April 21, 2004
First Named Inventor	
Makoto SHIOMI	
Art Unit	**Examiner**
2629	Michael Pervan

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

☒ attorney or agent of record.
Registration number 34,313.

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

Signature — 56,007

Donald J. Daley
Typed or printed name

(703)-668-8000
Telephone number

December 8, 2009
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant:	Makoto SHIOMI	Confirmation No.:	5349
Application No.:	10/828,471	Examiner:	Michael Pervan
Filing Date:	April 21, 2004	Group Art Unit:	2629
Title:	LIQUID CRYSTAL DISPLAY		
Attorney Docket:	12480-000046/US		

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Mail Stop AF

December 8, 2009

REASONS FOR PRE-APPEAL REQUEST FOR REVIEW

Dear Sir:

Further to the concurrent filing of the attached Notice of Appeal, the following remarks are submitted in connection with the above-identified patent application under the Pre-Appeal Brief Review.

Appellant requests review of the rejection of claims 1-2, 4-8, 10-14 and 16-24 under 35 U.S.C. § 103(a) as allegedly unpatentable over 2002/0033789 ("Miyata") in view of U.S. Patent No. 5,027,111 ("Davis"), U.S. Patent No. 5,694,147 ("Gaalema") and further in view of U.S. Patent No. 6,943,768 ("Cavanaugh").

At page 4, the Final Office Action correctly recognizes that neither Miyata nor Davis discloses or suggests at least controlling start and stop of heating by the heater such that "a temperature of the liquid crystal panel" is "*not more than ± 3°C of a predetermined target temperature*" as required by claim 1. The Final Office Action, at page 4, relies upon Gaalema to disclose this feature. Appellant disagrees.

According to Gaalema, when an ambient temperature reaches a certain preselected level (e.g., target temperature of 40°), differential amplifier 40 has no output and the heating arrangement 24 is not turned on. However, as the ambient temperature decreases below 40°, the output from differential amplifier 40 increases thereby activating the control heating arrangement 24. When activated, the heating arrangement 24 heats the liquid crystal material 14 disposed over integrated circuit substrate 12.

In Gaalema, both the sensed temperature and the 40° threshold temperature refer to *ambient temperatures*, rather than "a temperature of the liquid crystal panel" itself as required by claim 1. Moreover, Gaalema is silent with regard to *controlling* start and stop of heating by the heater such that "a temperature of the liquid crystal panel," is "*not more than ±3°C of a predetermined target temperature*" as required by claim 1.

Furthermore, according to column 5, line 56 – column 6, line 6 of Gaalema, when voltage is applied to sensing arrangement 26, the Wheatstone bridge formed by resistors 32, 34, 36, and 28 causes the voltages

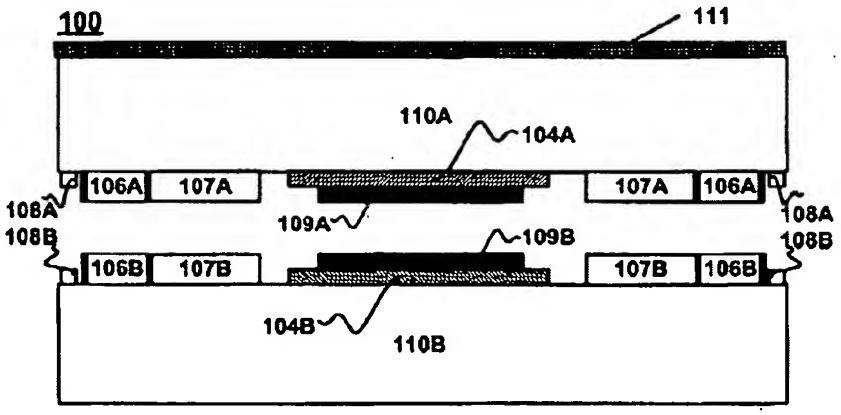
at nodes 1 and 2 to vary depending on the resistances of the temperature-dependent resistors 34 and 36. Gaalema discloses a threshold value of 40°C and temperature dependency, but fails to disclose or suggest any temperature *range* for the liquid crystal panel. Accordingly, Gaalema fails to disclose or fairly suggest a "heater control means for controlling start and stop of heating by the heater, in such a manner as to keep a temperature of the liquid crystal panel to be not more than ±3°C of a predetermined target temperature which is *within a range between 33°C and 63°C*" as required by claim 1.

Cavanaugh also fails to disclose or suggest at least a "heater control means for controlling start and stop of heating by the heater, in such a manner as to keep a temperature of the liquid crystal panel to be not more than ±3°C of a predetermined target temperature which is *within a range between 33°C and 63°C*" as required by claim 1.

Moving forward, at page 5, the Final Office Action correctly recognizes that Miyata, Davis and/or Gaalema, taken singly or in combination, fail to disclose or fairly suggest at least a heater "*including a plurality of heater electrodes, each of the plurality of heater electrodes being formed as a linear band aligned to be in parallel with a side of the liquid crystal panel*" as required by claim 1. The Final Office Action, at page 5, relies upon Cavanaugh to disclose this feature. Appellant disagrees.

Cavanaugh discloses a thermal control system for a liquid crystal cell. In the embodiment shown in FIG. 4C (which is reproduced below), the liquid crystal cell 100 includes integrated heater/temperature sensor elements 108A and 108B.

FIGURE 4C



Further, column 6, lines 22-36 of Cavanaugh describes FIG. 4C stating:

> FIG. 4C shows a liquid crystal cell platform 100 having a first glass substrate 110A in opposition to a second glass substrate 110B wherein the first substrate contains an integrated optical element 111, a transparent conductive electrode layer 104A, a liquid crystal alignment layer 109A, a metal gasket element layer 106A, a spacer element layer 107A and an integrated heater/temperature sensor element layer 108A. In this embodiment, the second substrate 110B contains a transparent conductive electrode layer 104B, a liquid crystal alignment layer

104B, metal gasket element layer 106B, a spacer element layer 107B, and an integrated active thermal element, heater/temperature sensor layer 108B.

According to column 9, lines 47-61 of Cavanaugh, a switch 407 selectively engages "the integrated heater/temperature sensor element 108 in a sense or heat mode." In the heat mode, the switch 407 is configured OFF so that a voltage potential is applied to operate the device 108 as a heater.

Further, FIG. 10A of Cavanaugh (reproduced below) is a top view of an embodiment of a liquid crystal cell. Referring to FIG. 10A, the heater/temperature sensor electrodes 502 and 502' have a *winding shape.*

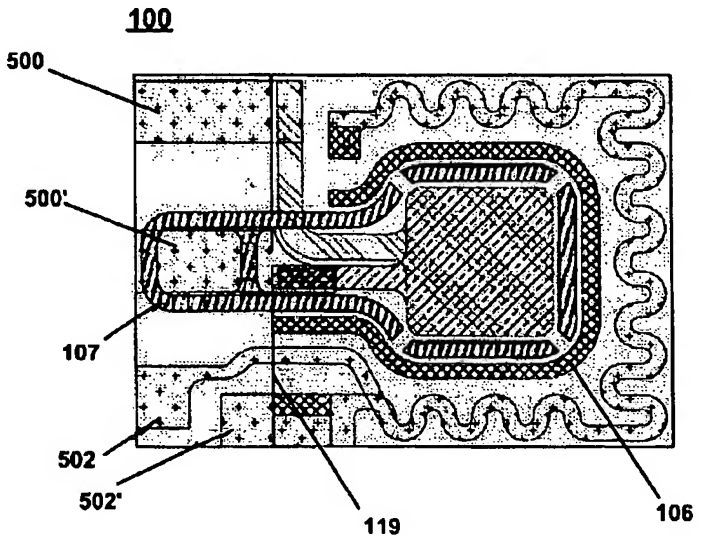
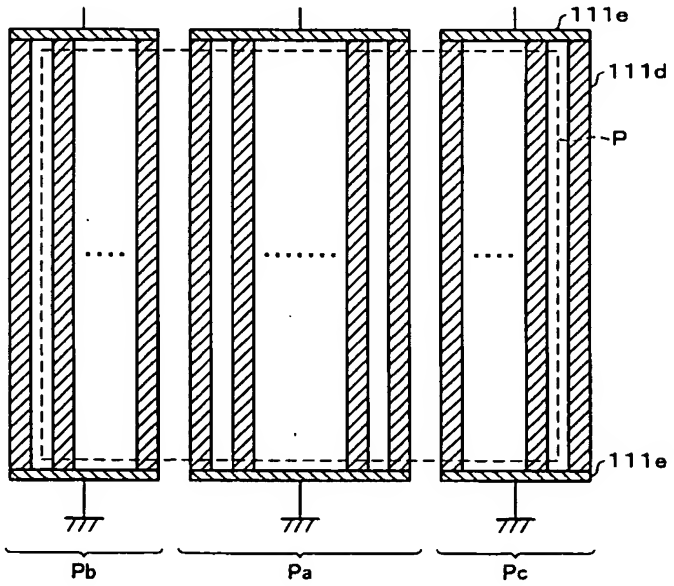


FIG. 7 of the instant application (a portion of which is reproduced below) shows an example embodiment of a plurality of heater electrodes 111d formed as a linear band to be in parallel with a side of the liquid crystal panel.



By comparing FIGS. 4C, 10A of Cavanaugh with FIG. 7 of the instant application, one can appreciate that the heater/temperature sensor elements in Cavanaugh are not formed as a linear band aligned to be in parallel with a side of the liquid crystal panel. Therefore, the sensor elements 108A, 108b and 502 do not constitute the plurality of heater electrodes formed as a linear band aligned to be in parallel with a side of the liquid crystal panel as required by claim 1. And, Cavanaugh does not disclose or suggest the "heater" of claim 1.

Further, at page 2, the Final Office Action states in-part:

> The cells of a liquid display are typically aligned to form a linear band and are also parallel with a side of the liquid crystal panel. By using the temperature sensor/heater, incorporated into a cell of a liquid crystal, of Cavanaugh, the heater electrodes would then form a linear band which would be in parallel with a side of the liquid crystal panel.

Appellant disagrees.

As the Pre-Appeal Board will appreciate, even assuming *arguendo* that the liquid crystal cell 100 of Cavanaugh is used to form a liquid crystal panel (which Appellant does not admit is the case), the plurality of heater/temperature sensor electrodes in Cavanaugh (e.g., 502 and 502' shown in FIG. 10A) would not result in a plurality of heater electrodes formed in the manner recited in claim 1; that is, such that each of the plurality of heater electrodes are "formed as a linear band aligned to be in parallel with a side of the liquid crystal panel." This is at least because the electrodes 502 and 502' are have a winding shape, but are not "*formed as a linear band aligned to be in parallel with a side of the liquid crystal panel*" as required by claim 1.

Because none of Miyata, Davis, Gaalema or Cavanaugh disclose or suggest the "heater" of claim 1, even in combination (assuming *arguendo* such a combination could be made, which Appellant does not admit), the references do not render claim 1 obvious. The references fail to render claims 7 and 13 obvious for reasons at least somewhat similar to those set forth above with regard to claim 1.

Claims 2, 4-6, 8, 10-12, 14 and 16-23 are not rendered obvious at least by virtue of their dependency.

Appellant also requests review of the rejection of claims 3, 9 and 15 under 35 U.S.C. § 103(a) as unpatentable over Miyata, Davis, Gaalema, Cavanaugh and further in view of U.S. Patent No. 7,106,287 ("Ham"). This rejection is respectfully traversed in that even assuming arguendo that Ham could be combined with Miyata, Davis, Gaalema and/or Cavanaugh (which Appellant does not admit), the resultant combination still fails to render even claims 1, 7 or 13 obvious because Ham suffers from at least the same above-discussed deficiencies as Miyata, Davis, Gaalema and Cavanaugh. Therefore, even in combination, Miyata, Davis, Gaalema and Cavanaugh fail to render claims 3, 9, and/or 15 obvious. Further, Appellant continues to submit that the arguments regarding claims 3, 9 and 15 set forth in Appellant's December 17, 2008 and June 4, 2009 Amendments are valid. These arguments are incorporated herein by reference. For at least the foregoing reasons, claims 3, 9 and 15 are patentable over Miyata in view of Davis, Gaalema, Cavanaugh, and further in view of Ham.

In view of the above, reconsideration of the objections and rejections and allowance of each of the pending claims in connection with the present application is earnestly solicited.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Andrew M. Waxman, Reg. No. 56,007, at the number of the undersigned listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY & PIERCE, PLC

By A. M. W. 56,007
Donald J. Daley, Reg. No. 34,313

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